

Application No. 09/851,210

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings of claims in the application:

1. (Currently Amended) A method for utilizing ~~redundant~~ additional color inks in a printing system, comprising:  
tessellating ~~the~~ available color space as defined by YMCK inks and at least one additional ~~the redundant~~ color inks ink, by using vertices representing each YMCK and the at least one additional ink, to divide the available color space into regions where the regions are arranged so as to minimize the range of luminance variation found within the regions.
2. (Previously Presented) The method of claim 1 further comprising:  
overlaying the tessellated color space result from the prior tessellating step with interpolation points so as to create an overlay lookup table.
3. (Previously Presented) The method of claim 2 further comprising:  
applying image data to the overlay lookup table to point to which ~~redundant~~ additional color inks to select and provide the amounts to use of the selected redundant color inks.
4. (Original) The method of claim 1 wherein the regions are arranged so that region boundaries are predominately orthogonal to the axis of luminance.
5. (Original) The method of claim 3 wherein the amounts are interpolated from the interpolation points stored in the overlay lookup table.
6. (Original) The method of claim 5 wherein the interpolation is performed by calculating the volume of tetrahedra formed by the interpolation points.

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7. (Original) The method of claim 1 wherein the regions are non-overlapping.

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8. (Currently Amended) A method in a printing system having YMCK inks, for utilizing additional redundant color inks ~~having~~ providing a given resultant color space, comprising:  
tessellating into regions the given resultant color space so as to minimize luminance variation in the regions as defined by the YMCK and redundant additional color inks utilized.
9. (Original) The method of claim 8 wherein the tessellation is achieved by:  
sorting the YMCK and additional redundant color inks by order of luminance from the darkest to the lightest,  
adding the redundant color inks as points to the color space and connecting the points in the sorted order so as to create tetrahedral tessellated regions.
10. (Original) The method of claim 9 wherein the regions are non-overlapping.
11. (Previously Presented) The method of claim 10 further comprising:  
overlaying the tessellated color space with interpolation points so as to create an overlay lookup table.
12. (Previously Presented) The method of claim 11 further comprising:  
applying image data to the overlay lookup table to point to which redundant color inks to select and provide the amounts to use of the selected redundant color inks.

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13. (Currently Amended) A method for utilizing YMCK and redundant additional color inks having a given resultant color space ~~to~~ for rendering image data in a printer, comprising:

tessellating the given resultant color space into regions so as to minimize luminance variation in the regions, the regions delineated by vertices representing each YMCK and redundant ~~the at least one additional color inksink~~ utilized by:

sorting the delineated vertices as defined by each YMCK and the at least one additional redundant color inks-ink by order of luminance from the darkest to the lightest and

connecting the delineated vertices as defined by YMCK and redundant color inks in the sorted order across the color space so as to create tetrahedral non-overlapping tessellated regions with borders which are as much as possible predominately orthogonal to the axis of luminance.

14. (Previously Presented) The method of claim 13 further comprising: overlaying the tessellated color space with interpolation points so as to create an overlay lookup table.

15. (Previously Presented) The method of claim 14 further comprising: applying image data to the overlay lookup table to point to which redundant color inks to select and provide the amounts to use of the selected redundant color inks.

16. (Original) The method of claim 13 wherein if creating a tetrahedral non-overlapping tessellated region results in a concave shape then additional tetrahedral non-overlapping tessellated regions are added to fill the cavity and maintain a convex construction.